Rethinking Assessment

University of BRISTOL
Graduate School of Education

Discussion paper 5:

Ethical issues in technology enhanced assessment

Q: Does technology enhanced assessment (TEA) lead to new social and educational divides?

Q: How far should we be worried about the proliferation of digitised assessment data?

This paper considers the emerging ethical issues in three areas of technology-enhanced assessment:

- The ethics of 'big data'
- The ethics of using social software for assessment
- The ethics of assessing young people's informal learning

Key recommendations

- Policy makers need to recognise and debate the ethical issues linked to the rapidly increasing amounts of educational data being collected and stored. This should include consultation with parents and young people and centre around issues of young people's rights to access and control their own data.
- Educators should ensure that all young people have the skills to manage personal data profiles and online social identities.
- Young people should be involved alongside researchers, practitioners and industry members in designing assessment practices that support them to participate in the creation of their own futures.

Widening access to assessment

The use of digital technologies has the potential to widen access to both learning and assessment by facilitating new sorts of assessment interactions, opening up innovative opportunities for participation, expression and collaboration and providing opportunities for the assessment of new skills[1]. For example, used in appropriate and meaningful ways digital technologies can:

- Make traditional exams and tests more accessible via assistive technologies and translation software
- Increase learner agency by providing web-based, anywhere, anytime access to assessment resources and by providing alternatives to text-based assessments with opportunities for submitting evidence via a range of media
- Offer more personalised assessments through the use of learning software that provides immediate feedback based on learner responses, tracking and analysis of learner assessment data and prediction modelling
- Increase learner participation in assessment processes by providing opportunities for both self and peer-assessment and by supporting the integration of summative assessments into learning activities in order to support learner reflection and development
- Provide challenging problems in online environments and simulations that are more authentic and relevant to young people's lives beyond formal education
- Improve assessment validity and reliability

Whilst not dismissing the huge potential benefits of technology-enhanced assessments there should be recognition that some practices may make assessment more accessible and comfortable; others may be divisive or exclusionary and there are possibilities of new divides emerging with new practices of technology-enhanced assessment.

Young people are not a homogenous group and we must avoid making assumptions about individuals' motivations and skills in the use of digital technologies. Many young people are confident in using digital tools but this is not equally spread amongst young people and many need support to develop competence in the practices that will allow them to benefit from the many opportunities offered by the digital world.

Developments in technology-enhanced assessment are significantly increasing the volume of data on student performance

The ethics of 'big data'

Increasingly vast amounts of data about the users of digital technologies is captured and analysed through traceable and measurable online activity. Similarly, developments in technology-enhanced assessment are significantly increasing the volume and changing the nature of data gathered about student performance in education.

There is much hype around the possibilities this offers for personalising learning experiences and for evidence-based, data-driven decision making at institution and national policy level. However, with data mining practices becoming more widespread and tools becoming more powerful, ethical concerns are beginning to be raised about the collection and use of data in the education sector. With an already prolific flow of education data, the necessity of collecting such massive quantities of information is under question and the reliability of its analysis had been disputed.[2]

Concerns have also been raised about what information is deemed relevant in the support of learning and educational decision making. There is an increasing call for the assessment of 'soft skills' within education which include the more affective skills, attributes, and dispositions associated with learning. This raises questions not only of how these skills can be reliably assessed but of whether such personal characteristics should be evaluated at all. Much of this and other data gathered about learners is done so without their consent, which raises ethical issues about young people's rights. There are also issues of ethical concern around the management, protection, storage and ownership of this data and whether students can access, own or control their personal data sets.

The very nature of the collection and analysis of data creates inequalities in terms of differing levels of access and ability to undertake analysis. This has the potential to create new digital divides between those with the skills and capital to access and make sense of data and those without.[3]

1 Grant, L. with Villalobos, G. (2008) Designing educational technologies for social justice. Bristol: Futurelab.
2 See for example Leckie, GB & Goldstein, H. 'Understanding uncertainty in school league tables', Fiscal Studies, 32, 207-224.
3 Boyd, d. & Crawford, K., Six Provocations for Big Data (2011). A Decade in Internet Time: Symposium on the Dynamics of the Internet and Society, September 2011. ssrn.com

The ethics of using social software for assessment

In line with current learning theories which acknowledge learners as active participants in their learning, some practitioners have begun to develop technology-enhanced assessment practices that aim to increase learner involvement in assessment, through the use of social software. Web 2.0 technologies offer new opportunities for active participation in content creation, media authoring, information sharing, communication and collaboration. Tools such as wikis for example, can give learners the opportunity to undertake self and peer assessment or to collaboratively revise a piece of work.

However, whilst Web 2.0 technologies can offer more in terms of student participation than traditional assessment practices, online, participative assessment practices are not necessarily transformative and can exacerbate existing social and educational divides. There is an acknowledged 'participation gap' in relation to the levels of young people's engagement in social, online cultures.[4] Not all young people benefit in equal ways from such practices. The use of social networking tools, for example, requires young people to participate in communities that involve complex social identity issues and young people's use of online networks often replicate the types of social divides and educational connections that they have offline.[5]

Students also need to trust in learning spaces, their peers and their teachers in order to feel safe enough to learn from failure without being overly concerned with the consequences. Online spaces, such as wikis, do not always provide these possibilities and can be exposed places in which to make errors.[6]

The ethics of assessing young people's informal learning

Increasing numbers of young people are involved in online 'participatory media cultures' in which they are creators and publishers of digital media in highly social and networked environments. It is argued that the practices developed via involvement in these cultures are important to succeeding in an increasingly digitally mediated world[4] and that valuing young people's experiences outside the classroom as a starting point for learning is an important step towards creating a more democratic learning process[7].

Using online 'badges' in education aims to contribute to the democratisation of assessment processes by using practices of participatory cultures to acknowledge learning achievements. Often found in online gaming cultures, badging is an alternative accreditation system which arises in online communities as a way for members to validate each others' knowledge, skills and experiences via the award of a visual icon in recognition of their achievements.[8]

Many working in the field of digital media and learning are enthusiastic about the possibilities that badges can offer the field of education. Individual online badge portfolios are portable and offer the possibility of an alternative assessment method that represents the range of an individual's skills within and beyond the boundaries of formal schooling. They can also be used to help learners visualise possible learning pathways.

However reflection is needed on key issues such as whether adopting badges into education systems will automatically introduce hierarchies to the practice and the ethical considerations associated with aspiring to evaluate every aspect of young people's informal learning. The variability in learners' motivations is also a consideration with the possibility of a badge system being biased towards those young people who are already comfortable with gaining external recognition and the associated values that already exist within education systems.[9]

Use of online networks often replicate the types of social divides and educational connections that exist offline

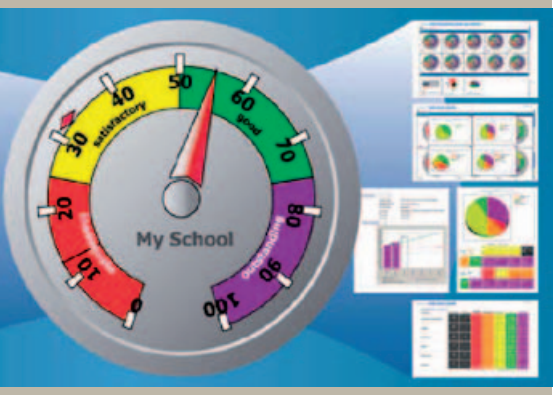
4 Jenkins, H., Clinton, K., Purushotma, R., Robison, A.J. and Weigel, M. (2006) *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. A MacArthur Foundation report. digitallearning.macfound.org
5 Boyd, d. (2011). "White Flight in Networked Publics? How Race and Class Shaped American Teen Engagement with MySpace and Facebook." In *Race After the Internet* (Eds. Lisa Nakamura and Peter Chow-White). Routledge, pp. 203-222. danah.org
6 Losh., L (2012) Learning from Failure: Feminist Dialogues on Technology, Part II. A blog post. dmlcentral.net digitallearning.macfound.org
7 Morgan, J & Williamson, B (2008) Enquiring Minds: Schools, knowledge and educational change. Bristol: Futurelab. enquiringminds.org.uk
8 Not-for-profit organisation The Mozilla Foundation has launched Open Badges, a framework for the development of badging systems. openbadges.org
See also Six Ways to Look at Badging Systems Designed for Learning. olpglobalkids.org
9 Jenkins, H. (2012) *How to earn you skeptic badge*. A blog post. henryjenkins.org

Rethinking Assessment

2012/2013 Series of discussion papers

5. Ethical issues in technology enhanced assessment

Case study:
Dashboards



Real-time progress monitoring at the level of the pupil, the class and the whole school.

One of the fastest growing areas of research related to education and technology involves the measurement, collection, analysis and reporting of data about learning. This is linked to the development of new techniques for data visualisation, including the idea of personalised dashboards. Software companies are beginning to develop data visualisation systems for schools which enable real-time progress monitoring at the level of the student, the class and the whole school. For example the company Escendency are marketing visualisation software for Special Schools which includes the potential for students to access their own 'pupil progress' dashboard.
escendency.com

Assessment is universally recognised as one of the most important – and powerful – elements of an educational experience. It is also seen as one of the hardest to reform. However, there is an increasingly accepted need for rethinking assessment if it is to keep up with current theoretical, cultural and technological developments affecting teaching and learning.

Digital technologies open up new possibilities for more personalised, immediate and engaging assessment experiences. However, the use of digital technologies for assessment (referred to as 'technology-enhanced assessment') has yet to be 'transformative', with current practices either replicating traditional assessment methods or manifesting in pockets of innovation that are not widespread.

How the potential of digital technologies can best support improved assessment practices and preferred educational outcomes is becoming an issue of increasing importance. An acknowledgement of the potential that digital technologies offer should recognise the complexity of the task, the many factors affecting successful educational change, and the significant ethical questions raised by the use of digital technologies in assessment.

This series of discussion papers draw on a substantial review of literature which aimed to identify the different ways in which technology currently impacts on educational assessment practices and how it could contribute to a new vision for assessment.

The review of literature is available at:
bristol.ac.uk/education/research/sites/tea

The following discussion papers have been produced in order to highlight key issues and questions identified by the review of literature:

Paper 1: Transforming education through technology enhanced assessment
Paper 2: Integrating the formative and summative through technology enhanced assessment
Paper 3: Exploiting the collaborative potential of technology enhanced assessment in Higher Education
Paper 4: Learning analytics and technology enhanced assessment
Paper 5: Ethical issues in technology enhanced assessment
Paper 6: National standards and technology enhanced assessment

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